

Docket No. PRD 2033 NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Apodaca et al.

Serial No. : 10/690,115

Art Unit:

Filed : October 21, 2003

Examiner:

For : PIPERAZINYL AND DIAZAPANYL BENZAMIDES AND
BENZTHIOAMIDES

I hereby certify that this correspondence is being deposited with the
United States Postal Service as first class mail in an envelope addressed
to: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

January 27, 2004

(Date of Deposit)

John W. Harbour

(Name of applicant, assignee, or Registered Representative)



(Signature)

January 27, 2003

(Date of Signature)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

Applicant(s) reserve(s) the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this

information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist.

☒ In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified national application (other than a continued prosecution application under §1.53(d)), within three months of the date of entry into the national stage of the above identified application as set forth in §1.491, or before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of a request for continued examination under §1.114, no additional fee is required.

☐ In accordance with §1.129(a), this Information Disclosure Statement is being filed in connection with ☐ the first or ☐ second After Final Submission, therefore:

☐ Statement in Accordance with §1.97(e)
(attached); or

☐ Please charge Deposit Account No. 10-
0750/ / the fee of \$180.00 as set forth
in §1.17(p).

☐ In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, or an action that otherwise closes prosecution and that it is accompanied by one of:

- ☐ Statement in Accordance with §1.97(e) (attached); or
- ☐ Please charge Deposit Account No. 10-0750/ / the fee of \$180.00 as set forth in §1.17(p).

☐ In accordance with §1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before the payment of the Issue Fee. Applicant(s) hereby petition(s) for consideration of this Information Disclosure Statement. Included are: Statement in Accordance with §1.97(e) as set forth below and the fee of \$180.00 as set forth in §1.17(p).

☒ Copies of each of the references listed on the attached Form PTO-1449 are enclosed herewith.

☐ Copies of references listed on the attached Form PTO-1449 are enclosed herewith EXCEPT THAT:

☐ In view of the voluminous nature of references [list as appropriate], and the likelihood that these references are available to the Examiner, copies are not enclosed herewith.

☐ If any of the foregoing publications are not available to the Examiner, Applicant will endeavor to supply copies at the Examiner's request.

☐ Copies of only foreign patent documents and non-patent literature are enclosed in accordance with 37 CFR 1.98 (a) (2). (The U.S. patents and each U.S. patent application publication listed on the attached Form PTO-1449 are not

enclosed because this U.S. patent application was filed after June 30, 2003 or this international application has entered the national stage under 35 USC §371 after June 30, 2003 (see USPTO waiver of requirement under 37 CFR 1.98 (a)(2)(i)).

☒ There are no listed references which are not in the English language.

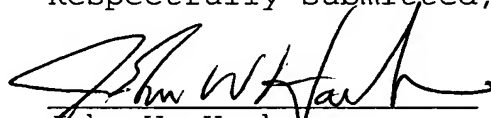
☐ The relevance of those listed references which are not in the English language is as follows:

☐ Attached are copies of search report(s) from corresponding patent application(s), which are listed on the attached Submission Under MPEP 609 D.

☐ Attached are the following non-published pending patent applications which may be deemed relevant, which are listed on the attached Submission Under MPEP 609 D.

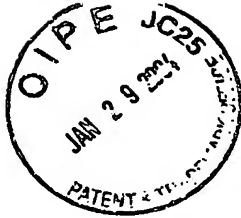
Please charge any deficiency or credit any overpayment to Deposit Account No. 10-0750/PRD2033/JWH. This form is submitted in triplicate.

Respectfully submitted,



John W. Harbour
Reg. No. 31,365
Attorney for Applicants

Johnson & Johnson
One Johnson & Johnson Plaza
New Brunswick, NJ 08933-7003
(732) 524-2169
DATED: January 27, 2004



PTO/SB/08A (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) Sheet 1 of 3	Application Number	10/690,115
	Filing Date	October 21, 2003
	First Named Inventor	Richard Apodaca
	Group Art Unit	
	Examiner Name	
	Attorney Docket Number	PRD 2033 NP

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document mm-dd-yyyy	Pages, Columns, Lines, where relevant passages or relevant figures appear
		Number	Kind Code ² (if known)			
		USPN 3,886,160		Tweit, Robert C.	05-27-1975	
		USPN 3,714,179		Tweit, Robert C.	01-30-1973	
		USPN 5,030,644		Baldwin et al.	07-09-1991	
		USPN 5,217,986		Pomponi, S.A. et al.	06-08-1993	
		USPN 5,352,707		Pompni, S.A. et al.	10-04-1994	
		USPN 5,869,479		Kreutner, W.; Hey, J.A.	02-09-1999	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document mm-dd-yyyy	Pages, Columns, Lines, where relevant passages or relevant figures appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵				
	✓	WO	99/42458		James Black Foundation Limited	08-26-1999		
	✓	EP	0978512	A1	Societe Civile Bioprojet	02-09-2000		
	✓	JP	02306237	A2	Kato et al.	12-19-1990		
	✓	WO	02/076925	A2	Eli Lilly and Company	10-03-2002		
	✓	WO	03/050099	A1	Ortho-McNeil Pharmaceutical, Inc.	06-19-2003		
	✓	WO	02/024695	A2	Ortho-McNeil Pharmaceutical, Inc.	03-28-2002		
	✓	WO	02/012214	A2	Ortho-McNeil Pharmaceutical, Inc.	02-14-2002		
	✓	WO	02/012190	A2	Ortho-McNeil Pharmaceutical, Inc.	02-14-2002		
	✓	WO	03/064411	A1	Novo Nordisk	08-07-2003		
	✓	WO	03/031432	A1	Novo Nordisk	04-17-2003		
	✓	WO	03/024929	A1	Novo Nordisk	03-27-2003		
	✓	WO	03/004480	A2	Novo Nordisk	01-16-2003		
	✓	WO	03/024928	A2	Novo Nordisk	03/27/2003		

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. ⁶ If possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.
Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO

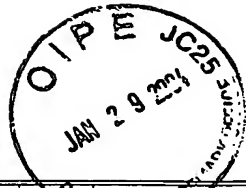
**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 3

Application Number	10/690,115
Filing Date	October 21, 2003
First Named Inventor	Richard Apodaca
Group Art Unit	
Examiner Name	
Attorney Docket Number	PRD 2033 NP

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. ¹	Include name of the author (in CAPITOL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	✓	ALBENGRES, E. et al. Systemic Antifungal Agents. Drug Safety (Feb. 1998) 18(2):83-97	
	✓	ALI, S.M. et al. Design, Synthesis, and Structure-Activity Relationships of Acetylene-Based Histamine H3 Receptor Antagonists. J. Med. Chem. (1999) 42(5):903-909	
	✓	ARRANG, J.-M. et al. Auto-inhibition of Brain Histamine Release Mediated by a Novel Class (H3) of Histamine Receptor. Nature (April 1983) 302:832-837	
	✓	ASH, A.S.F.; SCHILD, H.O. Receptors Mediating Some Actions of Histamine. Br. J. Pharmac. Chemother. (1966) 27:427-439	
	✓	BACK, D.J.; TJIA, J.F. Inhibition of Tolbutamide Metabolism by Substituted Imidazole Drugs In Vivo: Evidence for a Structure-Activity Relationship. Br. J. Pharmacol. (1985) 85:121-126	
	✓	BARNES, J.C. et al. The Selective Histamine H3 Receptor Antagonist Thioperamide Improves Cognition and Enhances Hippocampal Acetylcholine Release In Vivo. Soc. Neurosci. Abstr. (1993) 19:1813	
	✓	Bioworld Today, March 2, 1999, page 3	
	✓	BLACK, J.W. et al. Definition and Antagonism of Histamine H2-Receptors. Nature (April 1972) 236:385-390	
	✓	DING, Y.-S. et al. Synthesis of High Specific Activity (+) and (-)-6-[18F]Fluoronorepinephrine via the Nucleophilic Aromatic Substitution Reaction. J. Med. Chem. (1991) 34(2):767-771	
	✓	GANELLIN, C.R. et al. Synthesis of Potent Non-Imidazole Histamine H3-Receptor Antagonists. Arch. Pharm. Pharm. Med. Chem. (Weinheim, Ger.) (1998) 331:395-404	
	✓	GARBARG, M. et al. S-[2-(4-Imidazolyl)ethyl]isothiourea, a Highly Specific and Potent Histamine H3 Receptor Agonist. J. Pharmacol. Exp. Ther. (1992) 263(1):304-310	
	✓	Giltech Inc. Press Release Nov. 5, 1998	
	✓	GONZALEZ, F. GARCIA, et al. Synthesis of 3-aryl(alkyl)-4-(D-arabino-tetrahydroxybutyl)imidazoline-2-thiones, Carbohydrate Research, 22(2), 436-40 (English) 1968	
	✓	ICHINOSE, M.; BARNES, P.J. Histamine H3-Receptors Modulate Nonadrenergic Noncholinergic Neural Bronchoconstriction in Guinea-Pig In Vivo. Eur. J. Pharmacol. (1989) 174(1):49-55	
	✓	IMAMURA, M. et al. Unmasking of Activated Histamine H3-Receptors in Myocardial Ischemia: Their Role as Regulators of Exocytotic Norepinephrine Release. J. Pharmacol. Exp. Ther. (1994) 271(3):1259-1266	
	✓	JONES, R.G. Studies on Imidazoles. II. The Synthesis of 5-Imidazolecarboxylates from Glycine and Substituted Glycine Esters. J. Am. Chem. Soc. (1949) 71:644-647	
	✓	JORDAAN, A.; ARNDT, R.R., The Synthesis of 1-Methyl-5-(α -indolyl)imidazole and 1-Methyl-2-ethylthiol-5-(α -indolyl)imidazole. Journal of Heterocyclic Chemistry 5(5), 723-5 (English) 1968	
	✓	KAPETANOVIC, I.M.; KUPFERBERG, H.J. Nafimidone, an Imidazole Anticonvulsant, and Its Metabolite as Potent Inhibitors of Microsomal Metabolism of Phenytoin and Carbamazepine. Drug Metab. Dispos. (1984) 12(5):560-564	
	✓	KORTE, A. et al. Characterization and Tissue Distribution of H3 Histamine Receptors in Guinea Pigs by N alpha-Methylhistamine. Biochem. Biophys. Res. Commun. (May 1990) 168(3):979-986	
	✓	KRAUSE, M. et al. Medicinal Chemistry of Histamine H3 Receptor Agonists; In The Histamine H3 Receptor - A Target for New Drugs Leurs, R.; Timmerman, H. (Eds.) Elsevier (1998) 175-196	
	✓	LAVRIJSEN, K. et al. Induction Potential of Antifungals Containing an Imidazole or Triazole Moiety. Biochem. Pharmacol. (1986) 35(11):1867-1878	
	✓	LEURS, R. et al. The Medicinal Chemistry and Therapeutic Potentials of Ligands of the Histamine H3 Receptor. Prog. Drug Res. (1995) 45:107-165	
	✓	LEURS, R. et al. "Therapeutic potential of histamine H3 receptor agonists and antagonists" Trends in Pharmacological sciences, Elsevier Trends Journal, Cambridge, BG, vol. 19, no. 5, 1 May 1998; Pages 177-184, XP004121095	
	✓	LIN, J.-S. et al. Involvement of Histaminergic Neurons in Arousal Mechanisms Demonstrated with H3-Receptor Ligands in the Cat. Brain Res. (1990) 523:325-330	
	✓	LINNEY, I.D. et al. Design, Synthesis, and Structure-Activity Relationships of Novel Non-Imidazole Histamine H3 Receptor Antagonists. J. Med. Chem. (2000) 43(12):2362-2370	
	✓	LOVENBERG, T.W. et al. Cloning and Functional Expression of the Human Histamine H3 Receptor. Mol. Pharmacol. (1999) 55:1101-1107	
	✓	LOVENBERG, T.W. et al. Cloning of Rat Histamine H3 Receptor Reveals Distinct Species Pharmacological Profiles. J. Pharmacol. Exp. Ther. (2000) 293(3):771-778	
	✓	MACHIDORI, H. et al. Zucker Obese Rats: Defect in Brain Histamine Control of Feeding. Brain Res. (1992) 590:180-186	
	✓	MCLEOD, R.L. et al. Antimigraine and Sedative Activity of SCH 50971: A Novel Orally-Active Histamine H3 Receptor Agonist. Soc. Neurosci. Abstr. (1996) 22:2010	
	✓	MEIER, G. et al. Piperidino-Hydrocarbon Compounds as Novel Non-Imidazole Histamine H3-Receptor Antagonists. Bioorg. Med. Chem. (2002) 10:2535-2542	
	✓	MONTI, J.M. et al. Effects of Selective Activation or Blockade of the Histamine H3 Receptor on Sleep and Wakefulness. Eur. J. Pharmacol. (1991) 205(3):283-287	
	✓	MORISSET, S. et al. High Constitutive Activity of Native H3 Receptors Regulates Histamine Neurons in Brain. Nature (Dec. 2000) 408:860-864	
	✓	ODA, T. et al. Molecular Cloning and Characterization of a Novel Type of Histamine Receptor Preferentially Expressed in Leukocytes. J. Biol. Chem. (2000) 275(47):36781-36786	
	✓	PANULA, P. et al. Significant Changes in the Human Brain Histaminergic System in Alzheimer's Disease. Soc. Neurosci. Abstr. (1995) 21:1977	



✓	PHILLIPS, M.E. Positron Emission Tomography Provides Molecular Imaging of Biological Processes. Proc. Natl. Acad. Sci. (2000) 97(16):9226-9233	
✓	PHILLIPS, J.G.; ALI, S.M. Medicinal Chemistry of Histamine H3 Receptor Antagonists; In The Histamine H3 Receptor - A Target for New Drugs Leurs, R.; Timmerman, H. (Eds.) Elsevier (1998) 197-222	
✓	PHILLIPS, J.G. et al. Chapter 4, Recent Advances in Histamine H3 Receptor Agents. Ann. Reports in Med. Chem., 31, 1998, pages 31-40	
✓	ROULEAU, A. et al. Bioavailability, Antinociceptive and Antiinflammatory Properties of BP 2-94, a Histamine H3 Receptor Agonist Prodrug. J. Pharmacol. Exp. Ther. (1997) 281(3):1085-1094	
✓	SABBATINI, RENATO, M.E., The Cyclotron and PET. In Brain & Mind an electronic magazine about Neuroscience [online], March, 1997. Retrived from the internet, <http://www.epub.org.br/cm/n01/pet/petcycto.htm>	
✓	SCHLICKE, E.; MARR, I. The Moderate Affinity of Clozapine at H3 Receptors Is Not Shared by Its Two Major Metabolites and by Structurally Related and Unrelated Atypical Neuroleptics. Naunyn-Schmiedeberg's Arch. Pharmacol. (1996) 353:290-294	
✓	SHEETS, J.J.; MASON, J.I. Ketoconazole: a Potent Inhibitor of Cytochrome P-450-Dependent Drug Metabolism in Rat Liver. Drug Metab. Dispos. (1984) 12(5):603-606	
✓	STARK, H. et al. Developments of Histamine H3-Receptor Antagonists. Drugs Future (1996) 21(5):507-520	
✓	TOZER, M.J., et al.: "From Histamine to imidazolylalkyl-sulfonamides: the design of a novel series of histamine H3 receptor antagonists"; Bioorganic & Medicinal Chemistry Letters, OXFORD, GB, vol. 9, no. 13, 5 July 1999, Pages:1825-1830, XP004168846	
✓	TOZER, M.J.; KALINDJIAN, S.B. Histamine H3 Receptor Antagonists. Exp. Opin. Ther. Patents (2000) 10(7):1045-1055	
✓	WALCZYNSKI, K. et al. Non-Imidazole Histamine H3 Ligands, Part 2: New 2-Substituted Benzothiazoles as Histamine H3 Antagonists. Arch. Pharm. Pharm. Med. Chem. (Weinheim, Ger.) (1999) 332:389-398	
✓	WALCZYNSKI, K. et al. Non-Imidazole Histamine H3 Ligands. Part 1. Synthesis of 2-(1-Piperazinyl)- and 2-(Hexahydro-1H-1,4-diazepin-1-yl)benzothiazole Derivatives as H3-Antagonists with H1 Blocking Activities. Farmaco (1999) 54:684-694	
✓	WEST, R.E. et al. Identification of Two H3-Histamine Receptor Subtypes. Mol. Pharmacol. (1990) 38(5):610-613	
✓	WEST, R.E., Jr. et al. The Profiles of Human and Primate [3H]N alpha-methylhistamine Binding Differ from That of Rodents. Eur. J. Pharmacol. (1999) 377:233-239	
✓	YOKOYAMA, H. et al. Effect of Thioperamide, a Histamine H3 Receptor Antagonist, on Electrically Induced Convulsions in Mice. Eur. J. Pharmacol. (1993) 234:129-133	
✓	ANJANEYULU, B. et al. Synthesis of 14C-Labelled 1-Methanesulphonyl-3-(1-methyl-5-nitro-1H-imidazol-2-yl)-2-imidazolidinone, (Go 10213). J. Labelled Compd. Radiopharm. (1983) 20(8):951-961	
✓	IEMURA, R. et al. Synthesis of Benzimidazole Derivatives as Potential H1-Antihistaminic Agents. J. Heterocycl. Chem. (1987) 24:31-37	
✓	IWATA, R. et al. Synthesis of 3-[1H-Imidazol-4-yl]propyl 4-[18F]fluorobenzyl Ether ([18F]Fluoroproxyfan): A Potential Radioligand for Imaging Histamine H3 Receptors. J. Labelled Compd. Radiopharm. (2000) 43:873-882	
✓	JAROSINSKI, M.A.; ANDERSON, W.K. Preparation of Noncondensed 2-Substituted 1-Methylimidazoles via Ipso Substitution Reaction on 2-Sulfinyl or 2-Sulfonyl Derivatives of 4,5-Disubstituted 1-Methylimidazoles. J. Org. Chem. (1991) 56(12):4058-4062	
✓	OHTA, S. et al. Synthesis and Application of Imidazole Derivatives. Introduction of Carbogenic Substituents into the 5-Position of 1-Methyl-1H-imidazole. Chem. Pharm. Bull. (1992) 40(10):2681-2685	
✓	PHILLIPS, B.T. et al. Preparation of 5-Substituted 2-Mercapto-1-methylimidazoles. Direct Metalation of 2-Mercapto-1-methylimidazole. Synthesis (1990):761-763	
✓	SCHNETTLER, R.A. et al. 4-Aroyl-1,3-dihydro-2H-imidazol-2-ones, a New Class of Cardiotonic Agents. J. Med. Chem. (1982) 25:1477-1481	
✓	SHAPIRO, G.; MARZI, M. Synthesis of 2,5-Dilithio-1-methylimidazole. Tetrahedron Lett. (1993) 34(21):3401-3404	
✓	ERDELYI, M.; GOGOLL, A. Rapid Homogeneous-Phase Sonogashira Coupling Reactions Using Controlled Microwave Heating. J. Org. Chem. (2001) 66(12):4165-4169	
✓	APODACA, R. et al. A New Class of Diamine-based Histamine H3 Receptor Antagonists: 4-(Aminoalkoxy)benzylamines. J. Med. Chem. (2003) 46(18):3938-3944	
✓	STARK, H. Recent Advances in Histamine H3/H4 Receptor Ligands. Expert Opin. Ther. Patents (2003) 13(6):851-865	
✓	Phenylalkynes to Treat Histamine-Mediated Conditions. Expert Opin. Ther. Patents (2003) 13(11):1759-1762	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Unique citation designation number. 2 Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.